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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/699,805	10/30/2000	William Thornton	98006/17UTL	8722
23873	7590	12/17/2003	EXAMINER	
ROBERT W STROZIER, P.L.L.C			SOTOMAYOR, JOHN	
PO BOX 429			ART UNIT	
BELLAIRE, TX 77402-0429			PAPER NUMBER	
			3714	20

DATE MAILED: 12/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/699,805

Applicant(s)

THORNTON, WILLIAM

Examiner

John L. Sotomayor

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 8-24 and newly added claims 25-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 8-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Response to Amendment*

1. In response to the amendment filed October 6, 2003, claims 3-7 are cancelled and claims 1,2, 8-24 and the newly added claims 25-27 are pending.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eggert et al (US 6,193,519) in view of Lampotang et al (US 5,769,641).

Regarding claim 1, Eggert et al discloses a simulation apparatus comprising a plurality of electronic signals corresponding to a heart beat (Col 4, lines 46-62), a tactile pulse signal to

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detect a pulse signal discernable by touch (Col 6, lines 26-40), and an audio simulator for generating a heart beat signal (Col 4, lines 46-62). Eggert et al does not specifically disclose the generation of a pulse signal or a correlated heart sound. However, Lampotang et al teaches a simulation system which generates a pulse signal and a synchronized heart sound. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide a system comprising a plurality of electronic signals corresponding to a heart beat, a tactile pulse signal to simulate a pulse signal discernable by touch, and an audio simulator for generating a correlated heart beat signal. Combining the system disclosed by Eggert et al with the teaching of Lampotang et al produces a system that closely corresponds to a real patient.

Regarding claim 2, Eggert et al discloses a simulation apparatus comprising a plurality of electronic signals corresponding to a heart beat (Col 4, lines 26-45) distributed in an appropriate fashion, left side or right side, required by the training regimen (Col 6, lines 40-52), and an audio simulator for generating a heart beat signal (Col 4, lines 26-45) that may be heard through a stethoscope. Eggert et al does not specifically disclose the generation of a pulse signal or a correlated heart sound. However, Lampotang et al teaches a simulation system which generates a pulse signal and a synchronized heart sound. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide a system comprising a plurality of electronic signals corresponding to a heart beat, a tactile pulse signal to simulate a pulse signal discernable by touch, and an audio simulator for generating a correlated heart beat signal in an appropriate position, whether that is the left or right side. Combining the system disclosed by Eggert et al with the teaching of Lampotang et al produces a system that provides more flexibility for training staff.

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4. Claims 8-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eggert et al in view of Lampotang et al in further view of Takashina et al (US 6,461,165).

Regarding claim 9, Eggert et al discloses that the audio simulator housed within a housing (Col 4, lines 37-44 and Fig. 2). Eggert et al does not specifically disclose a tactile simulator housed within a housing. However, Takashina et al teaches that a tactile simulator may be housed within a housing that simulates a manikin (Col 2, lines 22-35). Therefore, it would have been obvious to one of ordinary skill in the art to provide a simulator with audio simulator housed within a housing as disclosed by Eggert et al and tactile simulators housed within a housing as taught by Takashina et al for the purposes of providing a system that is more self-contained and easily used.

Regarding claims 11 and 17, Eggert et al discloses that the audio simulator housing is contained by a simulator that simulates an upper part of a human body including simulated chest and arm portions (Col 2, lines 27-54 and Figure 2). Eggert et al does not specifically disclose a tactile simulator housing that is contained by a simulator that simulates an upper part of a human body including simulated chest and arm portions. However, Takashina et al teaches that a tactile simulator may be housed within a housing that simulates a manikin including simulated chest and arm portions. Therefore, it would have been obvious to one of ordinary skill in the art to provide an audio simulator housing contained within a simulator that simulates an upper part of a human body including simulated chest and arm portions and tactile simulators housed within a simulator that simulates an upper part of the human body as disclosed by Eggert et al and including simulated chest and arm portions as taught by Takashina et al for the purposes of providing a system that better represents the human body.

Regarding claims 8,10,13, 16, 19 and 27, Eggert et al discloses a simulator designed to represent a patient, such as a manikin, with a plurality of sensors and electronic signals to represent a plurality of physical diagnostic signals such as any one of a plurality of body noises including heart and lung sounds (Col 4, lines 46-62). Eggert et al does not specifically disclose that a tactile pulse simulator comprises any one of a tactile switch, collapsible tube apparatus or piezoelectric transducer (claims 8 and 16) or that the tactile simulator comprises a resilient cover over a tactile switch (claims 10, 13 and 19). However, Takashina et al teaches that a simulated pulse may be derived from a collapsible tube apparatus built within a simulator comprising a manikin (Col 2, lines 22-35). Takashina also teaches that the tube apparatus is made of a soft rubber or synthetic resin so as to reproduce feeling in a finger that is similar to the human body diagnosis (Col 2, lines 36-39). Therefore, it would have been obvious to one of ordinary skill in the art at to provide a simulator designed to represent a patient, such as a manikin, with a plurality of sensors and electronic signals to represent a plurality of physical diagnostic signals such as any one of a plurality of body noises including heart and lung sounds as disclosed by Eggert et al with a tactile pulse simulator consisting of a collapsible tube apparatus with a resilient cover over a tactile switch as taught by Takashina et al for the purposes of producing a training simulator that has the appearance of a human system and provides a realistic pulse tactile signal.

Regarding claim 12, Eggert et al discloses a simulator apparatus wherein pulse simulation signals are detected in a simulated arm in a first housing and audio is detected from the chest, a second housing (Col 6, lines 27-52). Eggert et al does not specifically disclose that the tactile sensor for the pulse is located in the wrist of the simulator (claim 12). However, Takashina et al

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teaches that pulsation sensors are located at all major correspondence points with the human body the simulator is designed to represent (Fig. 2). Therefore, it would have been obvious to one of ordinary skill in the art at to provide a simulator apparatus wherein pulse simulation signals are detected in a simulated arm in a first housing and audio is detected from the chest, a second housing as disclosed by Eggert et al and wherein the pulse simulator is located in a simulated wrist and the audio simulator located in the chest portion as taught by Takashina et al for the purposed of producing a simulator that most closely matches the audio and pulsation locations on a human body.

Regarding claim 14, Eggert et al discloses a simulator apparatus wherein pulse simulation signals are detected in a simulated arm in a first housing and audio is detected from the chest (Col 6, lines 26-52). Eggert et al does not specifically disclose that the tactile sensor and the audio sensor are located in two separate housings. However, Takashina et al teaches that pulsation sensors are located at all major correspondence points with the human body the simulator is designed to represent (Fig. 2) and that the audio sensor may be located in a second housing (Col 2, lines 52-56). Therefore, it would have been obvious to one of ordinary skill in the art to provide a simulator apparatus wherein pulse simulation signals are detected in a simulated arm in a first housing and audio is detected from the chest as disclosed by Eggert et al and wherein the pulse simulator is located in a simulated wrist and the audio simulator located in the chest portion as taught by Takashina et al produces a simulator that provides a more accurate teaching methodology for students.

Regarding claim 15, Eggert et al discloses a simulator apparatus wherein pulse simulation signals are detected in a simulated arm and audio is detected from the chest (Col 6, lines 26-52).

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Eggert et al does not specifically disclose that the tactile sensor for the pulse is located in the wrist of the simulator or that the tactile simulator comprises a resilient cover over a tactile switch. However, Takashina et al teaches that pulsation sensors are located at all major correspondence points with the human body the simulator is designed to represent (Fig. 2) and that a tube apparatus is made of a soft rubber or synthetic resin so as to reproduce feeling in a finger that is similar to the human body diagnosis (Col 2, lines 36-39). Therefore, it would have been obvious to one of ordinary skill in the art to provide a simulator apparatus wherein pulse simulation signals are detected in a simulated arm and audio is detected from the chest as disclosed by Eggert et al and wherein the pulse simulator is located in a simulated wrist and that the tactile simulator comprises a resilient cover over a tactile switch as taught by Takashina et al for the purposed of producing a simulator in which diagnosis points are located in a fashion to emulate the human body for better training of medical professionals.

Regarding claims 18, Eggert et al discloses a simulator apparatus wherein pulse simulation signals are detected in a simulated arm (Col 6, lines 26-52). Eggert et al does not specifically disclose that the tactile sensor for the pulse is located in either wrist of the simulator. However, Takashina et al teaches that pulsation sensors are located at all major correspondence points with the human body the simulator is designed to represent (Fig. 2) including pulsation points in both left and right wrists. Therefore, it would have been obvious to one of ordinary skill in the art to provide a simulator apparatus wherein pulse simulation signals are detected in a simulated arm as disclosed by Eggert et al and wherein the pulse simulator is located in both a right and left simulated wrist in the body of the simulator as taught by Takashina et al for the purposes of producing a simulator with the ability for multiple use by training professionals.



Regarding claims 20 and 22, Eggert et al discloses a simulator apparatus for generating pulse and heart beat simulations comprising a simulated upper body portion with a chest and left and right arm portions, a playback device for generating electronic signals corresponding to pulse and heartbeat signals, a tactile pulse simulator and a heart beat signal within the chest housing of the simulator with the heart beat detectable by a stethoscope (Col 2 and Col 3). Eggert et al does not specifically disclose a left and right pulse signal, or that the pulse signal is a pressure pulse signal. However, Takashina et al teaches that a pressure pulse signal may be generated through flexible tubing (Col 2, lines 23-53) and that pulsation signals are sent to detection locations on both the right and left wrist of a manikin simulator (Fig. 2). Therefore, it would have been obvious to one of ordinary skill in the art to provide a training simulator apparatus for generating pulse and heart beat simulations comprising a simulated upper body portion, a playback device for generating electronic signals corresponding to pulse and heartbeat signals, a tactile pulse simulator and a heart beat signal within the chest housing of the simulator with the heart beat detectable by a stethoscope as disclosed by Eggert et al with detectable pulsation signals in a left and right wrist location as taught by Takashina et al for the purpose of producing a training simulator that closely resembles the subjects for which the simulator is designed providing a realistic training environment for medical professionals.

Regarding claims 21 and 26, Eggert et al discloses a simulator designed to represent a patient, such as a manikin, with a plurality of sensors and electronic signals to represent a plurality of physical diagnostic signals such as any one of pulse, heart beat, or lung sounds (Col 4, lines 25-62). Eggert et al does not specifically disclose that the tactile pulse simulator comprises any one of a tactile switch, collapsible tube apparatus or piezoelectric transducer.

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However, Takashina et al teaches that a simulated pulse may be derived from a collapsible tube apparatus as a tactile pulse simulator built within a simulator comprising a manikin (Col 2, lines 22-35). Therefore, it would have been obvious to one of ordinary skill in the art to provide a simulator designed to represent a patient, such as a manikin, with a plurality of sensors and electronic signals to represent a plurality of physical diagnostic signals such as any one of pulse, heart beat, or lung sounds as disclosed by Eggert et al and comprising a tactile pulse simulator as taught by Takashina et al for the purposes of producing a training simulator that has the appearance of a human system and provides a realistic pulse tactile signal.

Regarding claim 23, Eggert et al discloses a simulator apparatus wherein pulse simulation signals are detected in a simulated arm (Col 6, lines 26-52). Eggert et al does not specifically disclose that the tactile sensor for the pulse is located in either wrist of the simulator. However, Takashina et al teaches that pulsation sensors are located at all major correspondence points with the human body the simulator is designed to represent (Fig. 2) including pulsation points in both left and right wrists. Therefore, it would have been obvious to one of ordinary skill in the art to provide a simulator apparatus wherein pulse simulation signals are detected in a simulated arm as disclosed by Eggert et al and wherein the pulse simulator is located in both a right and left simulated wrist in the body of the simulator as taught by Takashina et al for the purposes of producing a simulator with the ability for multiple use by training professionals.

Regarding claim 24, Eggert et al discloses a simulator apparatus wherein pulse simulation signals are detected in a simulated arm and audio is detected from the chest (Col 6, lines 26-52). Eggert et al does not specifically disclose that the tactile sensor for the pulse is located in the wrist of the simulator or that the tactile simulator comprises a resilient cover over a tactile

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switch. However, Takashina et al teaches that pulsation sensors are located at all major correspondence points with the human body the simulator is designed to represent (Fig. 2) and that a tube apparatus is made of a soft rubber or synthetic resin so as to reproduce feeling in a finger that is similar to the human body diagnosis (Col 2, lines 36-39). Therefore, it would have been obvious to one of ordinary skill in the art to provide a simulator apparatus wherein pulse simulation signals are detected in a simulated arm and audio is detected from the chest as disclosed by Eggert et al and wherein the pulse simulator is located in a simulated wrist and that the tactile simulator comprises a resilient cover over a tactile switch as taught by Takashina et al for the purposes of producing a simulator in which diagnosis points are located in a fashion to emulate the human body for better training of medical professionals.

Regarding claim 25, Eggert et al discloses a simulator apparatus for generating pulse and heart beat simulations comprising a simulated upper body portion with a chest and left and right arm portions, a playback device for generating electronic signals corresponding to pulse and heartbeat signals, a tactile pulse simulator and a heart beat signal within the chest housing of the simulator with the heart beat detectable by a stethoscope (Col 2 and Col 3). Eggert et al does not specifically disclose a left and right pulse signal, or that the pulse signal is a pressure pulse signal. However, Takashina et al teaches that a pressure pulse signal may be generated through flexible tubing (Col 2, lines 23-53) and that pulsation signals are sent to detection locations on both the right and left wrist of a manikin simulator (Fig. 2). Therefore, it would have been obvious to one of ordinary skill in the art to provide a simulator apparatus for generating pulse and heart beat simulations comprising a simulated upper body portion with a chest and left and right arm portions, a playback device for generating electronic signals corresponding to pulse

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and heartbeat signals, a tactile pulse simulator and a heart beat signal within the chest housing of the simulator with the heart beat detectable by a stethoscope as disclosed by Eggert et al with detectable pulsation signals in a left and right wrist location as taught by Takashina et al for the purposes of producing a training simulator that closely resembles the subjects for which the simulator is designed providing a realistic training environment for medical professionals.

### ***Response to Arguments***

Applicant's arguments filed October 6, 2003 have been fully considered but they are not persuasive.

Regarding applicant's argument that the Eggert et al reference does not show "a tactile pulse simulator for receiving the pulse signal" as claimed in claim one, but instead that the finger cuff in the reference is used to simply to complete a circuit the argument is unpersuasive. The reference states that the tactile switch is contained within a "pulse oximeter finger cuff" (Col 6, line 28). A pulse oximeter finger cuff is a standard device for detecting and measuring a tactile pulse signal taken from a finger of a human subject and contains a tactile sensing device (See LifeGuard – A Wearable Vital Signs Monitoring System, Mundt, Page 1 and 2) discernible by touch. It is an inherent feature in the use of this device that the manikin disclosed by Eggert et al must have a pulse discernible by touch in order for the pulse oximeter finger cuff to function properly, therefore the reference discloses a touch discernible pulse signal and a tactile pulse simulator for detecting the signal and relaying it through the cable connected to the tactile switch within the oximeter finger cuff.

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Regarding the argument that the purpose of the invention is to require a student to use actual instruments – his/her finger and a real stethoscope – as currently claimed, neither of applicant's claims 1 or 2 preclude the use of virtual instruments either in place of, or in addition to, real instruments in use by a student when the claims are given their broadest interpretation. The argument is therefore unpersuasive.

Regarding applicant's representative's General Remarks, as shown by the above rebuttal, the Eggert et al reference shows that a pulse signal is discernible to the touch of a student which is generated through mechanical means. Thus the combination of Eggert et al with Takashina et al does teach the generation of pulse simulation signals through mechanical means and the simulation of synchronous heart sounds and pulses. The argument is therefore unpersuasive.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to John L Sotomayor whose telephone number is 703-305-4558.

The examiner can normally be reached on 6:30-4:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Hughes can be reached on 703-308-1806. The fax phone number for the organization where this application or proceeding is assigned is 703-746-8361.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4558.

jls  
December 9, 2003

  
S. THOMAS HUGHES  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700